WHAT IS CLAIMED IS:

1. An isolated DNA comprising a nucleic acid sequence encoding a polypeptide consisting of SEQ ID NO:22.

2. The DNA of claim 1, wherein the nucleic acid sequence encodes a polypeptide consisting of SEQ ID NO:1.

3. The DNA of claim 1, wherein the DNA comprises SEQ ID NO:3.

4. The DNA of claim 1, wherein the DNA comprises of SEQ ID NO:23.

5. A vector comprising

(a) a nucleic acid sequence that (i) encodes a polypeptide that inhibits proliferation of breast cancer cells, and (ii) hybridizes under highly stringent conditions to a probe consisting of a sequence that is the complement of SEQ ID NO:3.

(b) the complement of the nucleic acid sequence.

6. The vector of claim 5, wherein the nucleic acid sequence is operably linked to a transcriptional regulatory element (TRE).

7. A cell comprising the vector of claim 5.

8. An isolated polypeptide comprising:

(a) a protein that inhibits proliferation of breast cancer cells and is encoded by a nucleic acid sequence that hybridizes under highly stringent conditions to a probe consisting of a sequence that is the complement of SEQ ID NO:3; or

(b) the protein, except for one or more conservative amino acid substitutions.

9. The polypeptide of claim 8, wherein the polypeptide comprises the amino acid sequence of SEQ ID NO:22.

10. The polypeptide of claim 8, wherein the polypeptide comprises the amino acid sequence of SEQ ID NO:1.

11. A method of making a polypeptide, the method comprising culturing the cell of claim 7 and extracting the polypeptide from the culture.

12. A method of inhibiting proliferation of a cancer cell, the method comprising contacting the cancer cell with the polypeptide of claim 8.

13. The method of claim 12, wherein the contacting is *in vitro*.

14. The method of claim 12, wherein the cancer cell is in a mammal.

15. The method of claim 12, wherein the cancer cell is a breast cancer cell.

16. The method of claim 14, wherein the contacting comprises administering the polypeptide to the mammal.

17. The method of claim 14, wherein the contacting comprises administering a polynucleotide encoding the polypeptide to the mammal.

18. The method of claim 14, the method comprising:

a) providing a recombinant cell that is the progeny of a cell obtained from the mammal and has been transfected or transformed *ex vivo* with a nucleic acid encoding the polypeptide; and

b) administering the cell to the mammal.

19. A method of identifying a compound that enhances inhibition of proliferation of cancer cells, the method comprising:

a) providing a first and a second plurality of cancer cells;

b) combining a test compound, the first plurality of cancer cells, and the polypeptide of claim 8;

c) combining the second plurality of cancer cells and the polypeptide of claim 8; and

d) determining the level proliferation of the first plurality of cancer cells, wherein a decreased level of proliferation of the first plurality of cancer cells, as compared to the second plurality of cells, indicates that the test compound enhances inhibition of proliferation of cancer cells by the polypeptide.

20. A method of diagnosis, the method comprising:

(a) providing a test cell; and

(b) measuring the level of expression of a HIN-1 gene in the cell,

wherein lack of expression of the HIN-1 gene or a low level of expression of the HIN-1 gene is an indication that the test cell is a cancer cell.

21. The method of claim 20, wherein expression of the HIN-1 gene is measured as a function of the level of HIN-1 mRNA in the cell.

22. The method of claim 20, wherein the expression of the HIN-1 gene is measured as a function of the level of HIN-1 polypeptide in the cell.

23. A method of diagnosis, the method comprising:

(a) providing a test cell; and

(b) determining the degree of methylation of a HIN-1 promoter region in the test cell,

wherein a high degree of methylation of the HIN-1 promoter region is an indication that the test cell is a cancer cell.

24. The method of claim 23, wherein the test cell is a breast cell.

25. An isolated polypeptide comprising (a) a functional fragment of the polypeptide of claim 8; or (b) the functional fragment, except for one or more conservative amino acid substitutions.

26. An isolated DNA comprising a fragment of the nucleic acid with SEQ ID NO:3, wherein the fragment comprises nucleotides 55 and 56 of SEQ ID NO:3.

27. An antibody that binds to the polypeptide of claim 8.

28. The antibody of claim 27, wherein the antibody is a monoclonal antibody.

29. The antibody of claim 27, wherein the antibody is a polyclonal antibody.

30. A method of treatment comprising

identifying a patient as having cancer cells in which (a) HIN-1 gene expression is low or (b) a HIN-1 promoter region is methylated; and

treating the patient with a compound that reduces methylation of the HIN-1 promoter region.

31. A method of identifying a compound that replaces the function of HIN-1 in cells that do not express HIN-1, the method comprising:

(a) providing a first cell that does not express HIN-1;

(b) providing a second cell that does express HIN-1;

(c) treating the first cell and the second cell with a test compound; and

(d) determining whether the test compound decreases proliferation of the first or the second cell, wherein a compound that decreases proliferation of the first cell but not the second cell can potentially replace the function of HIN-1 in cells that do not express HIN -1.

32. A method of treatment comprising

identifying a patient as having cancer cells in which (a) HIN-1 gene expression is low or (b) a HIN-1 promoter region is methylated; and

treating the patient with a compound that induces expression of a gene with a methylated promoter region

33. The method of claim 23, wherein the cell is a pancreatic cell.

34. The method of claim 23, wherein the cell is a prostate cell.